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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/847,253	05/02/2001	Neil C. Singer	0162095-0004b	5037
24280	7590	07/26/2005	EXAMINER	
CHOATE, HALL & STEWART LLP EXCHANGE PLACE 53 STATE STREET BOSTON, MA 02109			PHAM, THIERRY L	
			ART UNIT	PAPER NUMBER
			2624	

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/847,253

Applicant(s)

SINGER ET AL.

Examiner

Thierry L Pham

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- Responsive to unsigned Oath/Declaration had been received and acknowledged.

Drawings

- New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings (figs. 1-2) are informal. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

- Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. **The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided.** The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details. The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Objections

- Claim 8 is objected to because of the following informalities: "sensory" should be placed as "sensor". Appropriate correction is required.

Duplicate Claims

• Applicant is advised that should claim 6 be found allowable, claim 16 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-14, 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by McConnell et al (US 6011373).

Regarding claim 1, McConnell discloses a computer peripheral (inkjet printer, col. 22, lines 34-37) comprising:

- at least one element (i.e. stepper motor, col. 22, lines 34-42) supported for motion;
- an electromechanical mechanism (stepper motor for driving the inkjet cartridge back and forth, col. 22, lines 34-42) for moving the moveable element; and
- circuitry (control system 22 of fig. 2 for inputting a command to drive the physical system, i.e., inkjet printer, to eliminate and/or reduce vibration, figs. 3-13, col. 1, lines 10-22 and col. 22, lines 34-58) for providing a shaped input to the electromechanical mechanism to move the movable element along a desired trajectory.

Please NOTE: This is just one example of a physical output system as described by McConnell. Other physical output systems also applied.

Art Unit: 2624

Regarding claim 2, McConnell further discloses the peripheral of claim 1 in which the desired trajectory results in maximum speed (output system speed, col. 1, lines 58-62).

Regarding claims 3-4, McConnell further discloses the peripheral of claim 1 wherein the desired trajectory results in quiet operation and vibration-reduced (reduce noise and vibration, abstract, figs. 3-4).

Regarding claim 5, McConnell further discloses the peripheral of claim 1 wherein the desired trajectory reduces unwanted frequencies (reduce and/or remove unwanted frequency, fig. 47, col. 22, lines 58-67 to col. 23, lines 1-8).

Regarding claim 6, McConnell further discloses the peripheral of claim 1 further including a sensor (measured sound of the printer, col. 22, lines 50-51) responsive to the dynamic response of the peripheral.

Regarding claim 7, McConnell further discloses the peripheral of claim 6 wherein the sensor is an accelerometer (measured acceleration frequency, fig. 4).

Regarding claim 8, McConnell further discloses the peripheral of claim 6 wherein the sensory is a microphone (measured sound of the printer, col. 22, lines 50-51).

Regarding claim 9, McConnell further discloses the peripheral of claim 6 wherein an output from the sensor (output response, figs. 15-47) is used by the circuitry to provide the shaped input (shaped inputs, figs. 11-12 and to determine which input commands provide less noise and vibration).

Regarding claims 10-11, McConnell further discloses the peripheral of claim 1 wherein the peripheral is a printer/scanner (inkjet printer, col. 22, lines 35-37, multifunctional printer including scanner (i.e. copy machine) is widely available and known in the art, and also notes

Art Unit: 2624

printer is just an example of an physical output system as discussed by McConnell, other physical output system also applied).

Regarding claim 12, McConnell further discloses computer peripheral comprising:

- at least one element (i.e. stepper motor, col. 22, lines 34-42) supported for motion;
- an electromechanical mechanism (stepper motor for driving the inkjet cartridge back and forth, col. 22, lines 34-42) for moving the moveable element;
- circuitry (control system 22 of fig. 2 for inputting a command to drive the physical system, i.e., inkjet printer, to eliminate and/or reduce vibration, figs. 3-13, col. 1, lines 10-22 and col. 22, lines 34-58) for providing a shaped input to the electromechanical mechanism to move the moveable element along a trajectory; and
- a user interface (user interface for selecting an input command, fig. 3-410-12) allowing the user to select a desired trajectory.

Regarding claim 13, McConnell further discloses the computer peripheral of claim 1 wherein the trajectory is quick, quiet, or in between (robustness and noise reduction, abstract, fig. 12).

Regarding claim 14, McConnell further discloses the peripheral of claim 1 wherein the trajectory suppresses unwanted frequencies (suppression methods, abstract, suppress peak frequencies that generates noises, fig. 47).

Regarding claim 16, McConnell further discloses the peripheral of claim 1 further including a sensor (measured sound of the printer, col. 22, lines 50-51) responsive to the dynamic response of the peripheral.

Regarding claims 17-18, McConnell further discloses the peripheral of claim 12 wherein the peripheral is a printer/scanner (scanner (inkjet printer, col. 22, lines 35-37, multifunctional printer including scanner (i.e. copy machine) is widely available and known in the art, and also

Art Unit: 2624

notes printer is just an example of an physical output system as discussed by McConnell, other physical output system also applied).

Regarding claim 19, McConnell further discloses the peripheral of claim 17 wherein the moveable element is a print head (ink cartridge, col. 22, lines 35-42).

Regarding claim 20, McConnell further discloses the peripheral of claim 17 wherein the moveable element is a paper feeding mechanism (inherently, all printers include a paper mechanism).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over McConnell as described in claim 1 above, and in view of applicant's admission of prior art (page 1, lines 10-22).

Regarding claim 15, McConnell teach a method for calculating an output response via an input command, but fails to explicitly teach and/or suggest using Input Shaping.

Applicant's admission of prior art, teaches the peripheral wherein the desired trajectory is determined using Input Shaping (page 1, lines 10-22).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify McConnell as per teachings of applicant's admission of prior art by calculating an output response (i.e. vibration results) using an Input Shaping methods because of a following reason: (●) to suppress residual vibration (page, 1, lines 10-22); (●) reduces acoustic noise (page 1, lines 10-22); (●) to improve McConnell's system by implementing an additional methods/techniques for reducing vibration/noise.

Art Unit: 2624

Therefore, it would have been obvious to combine McConnell with applicant's admitted prior art to obtain the invention as specified in claim 15.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


- US 6055391 to Jackson et al, discloses a system for vibration detection and control system for printer in a real-time basis. System as described by Jackson includes sensors for sensing sound, frequency, and to eliminate unwanted frequencies.
- US 5914736 to Tamura, discloses a carriage drive control system for printers and such vibration within the printers can be suppressed and printing can be performed at high speed.
- US 6694196 to Tuttle et al, discloses a method and apparatus for creating time-optimal commands for linear systems that controls an output system using an input command (input shaping methods, fig. 11).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thierry L Pham whose telephone number is (703) 305-1897. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on (703)308-7452. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thierry L. Pham



GABRIEL GARCIA
PRIMARY EXAMINER